

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of claims

1. (Currently amended) An ozone water comprising an aqueous solution containing ozone nano-bubbles which hold ozone therein, the bubbles having a mean diameter of about 140nm with a standard deviation of about 30nm, with each of the ozone nano-bubbles surrounded by an inorganic shell consisting predominantly of electrolytic ions of iron, ~~or the like~~ manganese, calcium, sodium, or magnesium, which inhibits the ozone nano-bubbles from dissipating ~~diffusing through the aqueous solution, wherein the ozone nano-bubbles with the mean diameter of about 140nm (with a standard deviation of about 30nm) are found to be stable in water after one week when the ozone water is placed in a glass bottle, and stored in a cool, dark place with the bottle being covered with a lid, and wherein the ozone concentration in the water has 1.0 mg/L or more in six months as the original ozone concentration has been about 1.5mg/L.~~
2. (Canceled)
3. (Currently amended) A method for producing an ozone water, comprising the step of instantaneously shrinking bubble diameters of ozone-containing microbubbles with diameter of 10 to 50 μm in an aqueous solution to generate ozone nano-bubbles having a mean diameter of about 140nm with a standard deviation of about 30nm by the application of a physical irritation to the ozone-containing microbubbles in the aqueous solution after the addition of electrolytes electrolytic ions of iron, manganese, calcium, sodium, or magnesium, to the aqueous solution so that the electric conductivity of the aqueous solution reachinges more than 300 $\mu\text{S}/\text{cm}$ ~~or more~~, wherein the ozone nano-bubbles with

the mean diameter of about 140nm (with a standard deviation of about 30nm), are found to be stable in water after one week when the ozone water is placed in a glass bottle, and stored in a cool, dark place with the bottle being covered with a lid, and wherein the ozone concentration in the water has 1.0 mg/L or more in six months as the original ozone concentration has been about 1.5mg/L.

4. (Currently amended) The method as claimed in Claim 3, wherein the microbubbles are stopped from shrinking in such a manner that a charge density on the surface of each of the microbubbles is increased to evolve electrostatic repulsive forces when the bubble diameter of the microbubbles is decreased to less than 200 nm or less in the step of instantaneously shrinking the microbubbles.

5. (Currently amended) The method as claimed in Claim 3, wherein the generated ozone nanobubbles are stabilized in such a manner that in the step of instantaneously shrinking the microbubbles, ~~negatively and positively charged~~ electrolyte ones of the electrolytic ions are electrostatically attracted to ions of H^+ and OH^- adsorbed by a gas-liquid interface and drawn to a part adjacent to the gas-liquid interface in the aqueous solution, and accumulated in high concentrations within a minute volume, to form a shell surrounding each of the microbubbles so that the ozone in the microbubbles is inhibited from diffusing through the aqueous solution.

6. (Canceled)

7. (Canceled)

8. (Original) The method as claimed in Claim 3, wherein the generated ozone nano-bubbles are stabilized in such a manner that adiabatic compression occurring in the step of instantaneously shrinking the microbubbles abruptly increases a temperature within each of the microbubbles to cause a

physicochemical change involving an extremely high temperature around each of the microbubbles .

9. (Original) The method as claimed in Claim 3, wherein the physical irritation is caused by electrically discharging the microbubbles using a discharger.

10. (Original) The method as claimed in Claim 3, wherein the physical irritation is caused by irradiating the microbubbles with ultrasonic waves using an ultrasonic generator.

11. (Original) The method as claimed in Claim 3, wherein the physical irritation is caused by compression, expansion and vortexes which occur when a flow is created in the aqueous solution by actuating a rotor set in a vessel holding the aqueous solution therein.

12. (Original) The method as claimed in Claim 3, wherein the physical irritation is caused by compression, expansion and vortexes, in the case where a circulating circuit is provided in a vessel, in such a manner that the aqueous solution containing the microbubbles is introduced into the circulating circuit and then caused to pass through an orifice having a single opening or a plurality of openings or a porous plate which is provided in the circulating circuit.
